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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.                   | CONFIRMATION NO.            |
|--|-------------|----------------------|---------------------------------------|-----------------------------|
| 10/714,309   | 11/14/2003  | Nobuhiro Takeda      | 1232-5209                             | 2114                        |
| 27123  | 7590        | 12/12/2008           |                                       |                             |
| MORGAN & FINNEGAN, L.L.P.<br>3 WORLD FINANCIAL CENTER<br>NEW YORK, NY 10281-2101 |             |                      | EXAMINER<br>DURNFORD GESZVAIN, DILLON |                             |
|  |             |                      | ART UNIT<br>2622                      | PAPER NUMBER                |
|  |             |                      | NOTIFICATION DATE<br>12/12/2008       | DELIVERY MODE<br>ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOPatentCommunications@Morganfinnegan.com  
Shopkins@Morganfinnegan.com  
jmedina@Morganfinnegan.com

|                              |   |   |  |
|------------------------------|---|---|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/714,309        | <b>Applicant(s)</b><br>TAKEDA, NOBUHIRO |  |
|                              | <b>Examiner</b><br>Dillon Durnford-Geszvain | <b>Art Unit</b><br>2622                 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/3/2008 has been entered.

### ***Response to Amendment***

2. Claims **1-4** are pending, and claims **1-4** are amended.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims **1-4** have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

4. **Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 7,050,101 (Wako) in view of US 6,476,941 (Kondo).**

5. As to claim **1**, Wako teaches an image sensing apparatus (see Fig. 1) comprising:

an image sensing element 100 having a photoelectric conversion portion (upper

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portion) at which a plurality of photoelectric conversion elements (15) are two-dimensionally arrayed generating and storing signal charges of an object (C5 L10-18);

a vertical transfer portion 20 which vertically transfers the signal charges stored in the photoelectric conversion portion in accordance with a vertical transfer pulse (C5 L19-52) the vertical transfer portion also generates unnecessary charges different from the signal charges (note that transferring charges with VCCDs inherently creates some noise, see for example Kondo C9 L15-27);

a horizontal transfer portion 30 which horizontally transfers the signal charges transferred from the vertical transfer portion in accordance with a horizontal transfer pulse (C6 L12-65);

a horizontal drain portion 51 which drains charges overflowing from the horizontal transfer portion (C7 L10-36);

a charge detection portion 40 which converts the signal charges transferred from the horizontal transfer portion 30 into a signal voltage or a signal current (C6 L66-C7 L9);

a switch (not shown) which inputs a reference voltage DR from a reference power supply (not shown) (C9 L11-26 for example); and

a driving circuit (not shown) which, while the signal charges are stored in the photoelectric conversion portion 15, stops providing the horizontal transfer pulse to the horizontal transfer portion 30, and drains the unnecessary charges generated at the vertical transfer portions of said image sensing element through the horizontal drain portion (Fig. 5 and C11 L13-33).

What Wako does not teach is that the horizontal drain portion only drains charges if the unnecessary charges are transferred over a tolerance of the horizontal transfer portion. However, Kondo teaches an imager with a horizontal drain region for draining unnecessary charges only if the unnecessary charges exceed a tolerance of the horizontal transfer portion (C14 L5-16).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have only transferred charges that exceeded a tolerance of the horizontal transfer portion, as is done in Kondo, in the image capture apparatus of Wako as this would allow for lower voltages to be used than the high drain potential of 33 V used in Wako.

6. As to claim **2**, see the rejection of claim **1** and note that Wako in view of Kondo teaches the apparatus of claim **1**, wherein the horizontal drain portion 51 (of Wako) which drains unnecessary charges is arranged adjacent to the horizontal transfer portion 30 in a vertical direction of the horizontal transfer portion (Fig. 1 of Wako), and when the unnecessary charges generated at the vertical transfer portion of said image sensing element reaches a predetermined amount at the horizontal transfer portion (the tolerance or capacitance of the horizontal transfer portion, Kondo C14 L5-16), the unnecessary charges are drained through the horizontal drain portion.

7. As to claim **3**, see the rejection of claim **1** and note that Wako further teaches the apparatus of claim **1**, wherein while the signal charges are stored in the photoelectric

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conversion portion, the vertical transfer portion is driven at high speed to drain the unnecessary charges generated at the vertical transfer portion of said image sensing element (C12 L14-20).

8. As to claim **4**, see the rejection of claim **1** and note that Wako further teaches the apparatus of claim **1**, wherein while the signal charges are stored in the photoelectric conversion portion, potentials of the vertical transfer portion is set to the same potential to drain the unnecessary sharges generated at the vertical transfer portion of said image sensing element (Fig. 5 and C12 L14-20 of Wako).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dillon Durnford-Geszvain whose telephone number is (571)272-2829. The examiner can normally be reached on Monday through Friday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dillon Durnford-Geszvain

12/8/2008

/David L. Ometz/

Supervisory Patent Examiner, Art Unit 2622